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Social Emotion Regulation Strategies Are Differentially Helpful for Anxiety and Sadness

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Little is understood about how emotion regulation strategies typically used to regulate one's own emotions can be used to help others in distress, a process we refer to as social emotion regulation. We integrated research on social support, the self-regulation of emotion, and appraisal theories to hypothesize that different kinds of support and emotion regulation strategies should be differentially helpful for others, depending on the kind of emotion they are experiencing. Specifically, we predicted that helping others to actively modify their situation, as opposed to their appraisals and emotional responses, will be more effective for those experiencing anxiety as anxiety is a response to appraising threat in one's environment. However, helping others to modify their appraisals and emotions should be more effective for those experiencing sadness as sadness is a response to an irrevocable loss. To test this, we created a novel paradigm in which regulation targets were recruited online to write about personal events causing anxiety or sadness and regulation providers were recruited to provide written help to the targets. Study 1 supported the hypothesis using strategies drawn from the social support literature (advice vs. emotional support). Study 2 used strategies drawn from the literature on the self-regulation of emotion (situation modification vs. reappraisal) to demonstrate that as predicted, different strategies are believed to be differentially helpful depending on the target's emotion and when adjusting for individual differences in social and affective functioning, targets judge social emotion regulation strategies to be differentially helpful when implemented by providers.

Keywords: social emotion regulation, social support, appraisal theory, reappraisal, situation modification

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From coping with the loss of a loved one to navigating financial hardships, difficult events in life require us to manage our emotional responses in order to respond adaptively. However, it is often necessary to turn to others for help with regulating our emotions. This can be observed in interactions ranging from psychotherapeutic practices to advice columns. People routinely share their emotional experiences with others, and studies have demonstrated that this is often done to elicit responses that can help them to regulate their emotions (Rimé, 2007). However, while much research has investigated how we regulate our own emotions, little is known about how we can help others to regulate their emotions, a process we refer to as social emotion regulation. Here, we investigated how people can effectively implement social emotion regulation by bridging research on social support, emotion regulation, and appraisal theories of emotion.

Social Support

Research on social support starts with the observation that we do not always bear our emotional burdens alone and describes how a broad range of actions from a support provider can impact another person's well-being and ability to cope with stress (Cohen & Wills, 1985; Thoits, 1986). Social support strategies have been divided into two major categories: (a) problem-focused strategies—such as advice on what to do—that can help a target actively modify situational aspects of a stressor and (b) emotion-focused strategies—such as emotional support—that can help a target modify their emotional response to a stressor (Carver et al., 1989; Cutrona & Russell, 1990; Folkman et al., 1986; Thoits, 1986). The literature on social support has not determined either problem-focused or emotion-focused strategies to be more effective than the other. Instead, these strategies are thought to be differentially effective depending on situational contexts. Theoretical and empirical work has bolstered a *strategy-situation fit* framework that proposes problem-focused support to be more effective for controllable

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stressors and emotion-focused support to be more effective for uncontrollable stressors. Utilizing support strategies selectively in accordance with this strategy-situation fit framework has been proposed to be a part of adaptive coping and social support provision (Cheng, 2001; Cheng et al., 1999, 2014; Cutrona, 1990; Cutrona & Russell, 1990; Folkman & Lazarus, 1980; Horowitz et al., 2001; Thoits, 1986).

Typically, research on social support asks how different kinds of support can impact global measures of well-being (e.g., health outcomes) or daily functioning but often does not focus on emotional processes per se. Although it has been proposed that the benefits of support may derive in part from the interpersonal deployment of emotion regulation strategies (Marroquín, 2011), this idea has been largely investigated in studies of the implicit ways in which the presence or touch of a close other lessens pain and anxiety (Beckes & Coan, 2011; Coan et al., 2006; Eisenberger, 2013). As such, drawing from concepts in the social support literature provides a basis for understanding how people can help others in distressing situations. However, drawing from the literature on emotion regulation is necessary for understanding more deeply the mechanisms by which people can help others to regulate their emotions.

Emotion Regulation

While extensive research has been done on emotion regulation, this work has focused on understanding the mechanisms involved in the self-regulation of emotion, which studies how individuals can change their own emotional responses to situations (Buhle et al., 2014; Gross, 1998a; Gross & John, 2003). Typically, this work investigates how the consequences of regulation strategies differ as a function of the stage of the emotion generation process they impact (Ochsner & Gross, 2008). Analogous to the distinction between problem- and emotion-focused strategies in the social support literature, in the self-regulation literature, a distinction is made between strategies that actively modify the situation that elicits an emotion (e.g., situation modification), as opposed to strategies such as reappraisal, which modify the cognitive appraisals that determine how an emotion is experienced. However, while the social support literature draws a division between strategies that target emotional responses (i.e., emotion-focused strategies) and those that do not (i.e., problem-focused strategies), the emotion regulation literature conceptualizes both types of strategies as regulatory processes that can modulate an emotional response at different stages of the emotion generation process (Gross, 1998a, 1998b).

Research on the self-regulation of emotion has predominantly investigated the outcomes and mechanisms of reappraisal, a strategy generally understood to promote adaptive affective and psychosocial outcomes (Gross, 1998a). As with research on social support, some work has begun to investigate how situational contexts can impact the effectiveness of emotion regulation strategies (Bonanno & Burton, 2013; Doré et al., 2016). This research has demonstrated that analogous to emotion-focused support, reappraisal is more adaptive in uncontrollable situations as compared to controllable ones (Haines et al., 2016; Troy et al., 2017, 2013). However, controllability is one factor out of many that can vary between situations. Prior work has also examined how people choose between reappraisal and distraction to regulate emotions at different intensity levels (Sheppes et al., 2011). However, little work has compared the effectiveness of emotion regulation strategies impacting earlier stages of the emotion generation process (e.g., comparing reappraisal to situation modification).

Appraisal Theories of Emotion

Appraisal theories posit that emotions are generated from the way one interprets, or appraises, the motivational relevance of stimuli and events. For example, anxiety is triggered by the appraisal of a potential threat in one's environment, whereas sadness is triggered by the appraisal that one has irrevocably lost something of value (Smith & Lazarus, 1993). Based off of appraisal theories, a person's emotions should be an important determinant for what kind of social emotion regulation strategy would be most helpful for them as emotional responses communicate multiple aspects of how a target is appraising their situation. In the case of anxiety, actively changing one's situation can facilitate avoidance of a potential threat. Therefore, specifying ways that targets could change their situation might be particularly helpful for anxiety. By contrast, because sadness results from appraisals of irrevocable loss (i.e., a situation that is no longer modifiable), helping targets find ways to modify their appraisals, and thus their emotional response, might be particularly helpful.

Some initial research supports our predictions that different kinds of social support and emotion regulation strategies are differentially helpful for different kinds of emotions. For example, different kinds of support strategies are imagined to be differentially helpful for scenarios causing different kinds of negative emotions (Pauw et al., 2018). In addition, participants prefer to think about positive outcomes for emotional images inducing fear but prefer to accept the depicted outcomes for images inducing sadness. However, in this latter study, the perceived efficacy was not always congruent with the actual efficacy of the strategies, especially for sadness (Vishkin et al., 2019). This suggests that beliefs about the helpfulness of emotion regulation strategies do not necessarily indicate how helpful the strategies actually are when implemented.

Prior Research on Social Emotion Regulation

The literature on the social context of emotion regulation has primarily considered how one's social environment can impact emotion regulation or how the use of different emotion regulation strategies can impact others (Butler et al., 2003; English & John, 2013; Gross & John, 2003). Prior research that has investigated how people modulate and regulate the emotions of others has done so in various ways (Dixon-Gordon et al., 2015; Zaki & Williams, 2013). For example, developmental research has long investigated how caretakers regulate the emotions of their children. This was originally investigated in the context of attachment styles and demonstrated that the way a caretaker attends or fails to attend to their child's emotions could impact the child's ability to self-regulate and navigate their social and physical environments (Barthel et al., 2018). However, this research does not investigate how strategies commonly investigated in the self-regulation of emotions can be implemented for others.

It is only relatively recently that research has focused on defining and understanding the mechanisms of social and interpersonal emotion regulation in adults by drawing from research on the self-regulation of emotion. Theoretical work has broadened mod-

els of self-regulation to apply to social emotion regulation (Reeck et al., 2016; Zaki & Williams, 2013). These models propose a series of processing steps by which a provider regulates another person's emotions. The first of these steps involves identifying the emotions of the target person experiencing distress. It is proposed that accurate identification of a target's emotions guides the selection and implementation of an appropriate strategy for helping the target to regulate (Reeck et al., 2016). Some recent work supports this notion by demonstrating that empathic accuracy is associated with more responsive provision of social support (Gregory et al., 2019). In conjunction with appraisal theories of emotion, we reason that if this is the case, it should be that different kinds of emotion regulation strategies are differentially helpful for others experiencing different kinds of emotions.

The growing interest in understanding social and interpersonal emotion regulation in adults is also demonstrated by the recent development of scales that measure individual differences in the tendency to seek interpersonal emotion regulation from others (Hofmann et al., 2016; Williams et al., 2018). In addition, aspects of interpersonal emotion regulation have been investigated in adults with in-person dyads. One study recruited romantic couples and assigned participants to choose a regulatory strategy for their partner to help them regulate emotional responses to aversive pictures. This study demonstrated that participants experienced less distress when their partners chose their regulatory strategy as opposed to when they chose their own strategy (Levy-Gigi & Shamay-Tsoory, 2017). However, another study in which a therapist instructed participants which strategy to use found that self-regulation was more effective than social regulation (Xie et al., 2016).

Overview of the Hypotheses and Present Studies

The aim of the current studies was to investigate how social emotion regulation can be best implemented for others, with an ecologically valid paradigm that mirrors how people help others regulate emotional events in their daily lives. We hypothesized that strategies that help others to actively modify their situations should be particularly helpful for those experiencing anxiety, whereas strategies that help others to modify their emotional responses should be particularly helpful for those experiencing sadness. We tested this hypothesis by developing a multiphase paradigm that draws on methods used in the social support and self-regulation of emotion literatures. Following the social support literature's emphasis on ecologically valid contexts, this paradigm collected written descriptions of experienced, real-world life events from targets recruited online that primarily elicited either anxiety or sadness. These descriptions were then presented to providers, who responded to targets with self-generated statements of written support. Following the self-regulation of emotion literature's use of controlled laboratory methods, we manipulated the provision of these strategies and assessed their effectiveness.

Study 1 provided an initial test of our hypotheses with strategies delineated in the social support literature as being either problem focused (i.e., advice) or emotion focused (i.e., emotional support). We recruited targets experiencing events causing anxiety and sadness. Here, we compared prospective beliefs, from targets (Phase 1) and providers (Phase 2), about the helpfulness of advice versus emotional support for the targets' events. To specifically investigate how emotion regulation strategies can be best implemented to help others experiencing distress, Study 2 then replicated and extended Study 1 with strategies delineated in the influential process model of emotion regulation (Gross, 1998b), namely situation modification and reappraisal. We recruited two groups of targets who were experiencing an event causing either anxiety or sadness. As in Study 1, we assessed targets' (Phase 1) and providers' (Phase 2) beliefs about the effectiveness of the regulatory strategies for the targets' events. However, it is unclear what the relationship is between beliefs about the helpfulness of strategies and the actual effectiveness of these strategies. As beliefs about our emotional responses in the future are not always accurate (Wilson & Gilbert, 2005), and the perceived and actual effectiveness of regulatory strategies are not always congruent (Vishkin et al., 2019), stated preferences for certain kinds of support may not be indicative of what will actually be most helpful. To address this, providers were trained to implement social emotion regulation strategies through written responses to targets aimed at helping targets to either modify their situations or reappraise their events. These responses were then sent to targets who judged the helpfulness of these responses (Phase 3) and also retrospectively assessed how helpful these responses were approximately 1 month later (Phase 4; see Figure 1 for layout of methods). As we investigated social emotion regulation in the context of experienced life events, we expected that individual differences in targets' social and affective functioning could impact our findings (Dunkel-Schetter et al., 1987). This was a concern particularly for Study 2 in phases that consisted of a between-groups component. As such, we planned to adjust for individual differences in targets' social and affective functioning to reduce noise in the results.

Study 1: Helpfulness of Social Support Strategies for Anxiety and Sadness

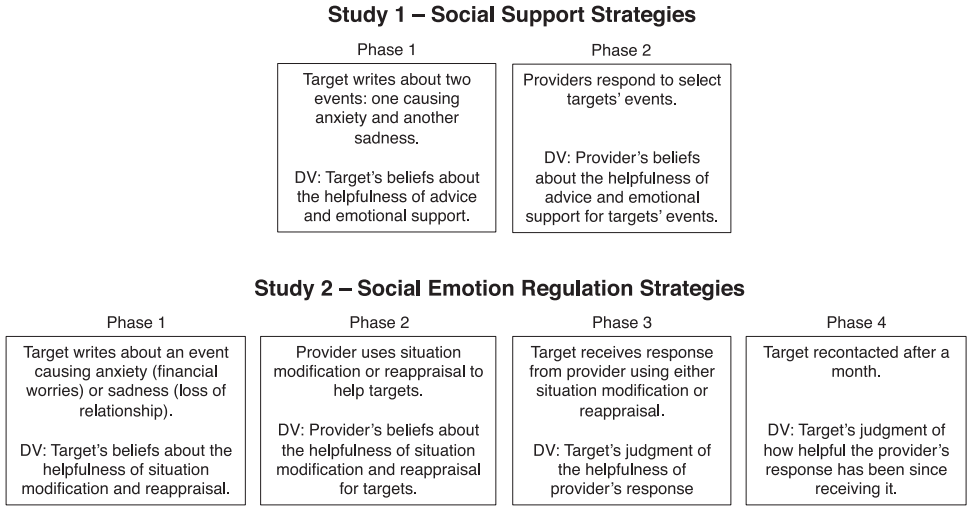
Phase 1: Do Targets Believe Advice and Emotional Support Are Differentially Helpful for Anxiety and Sadness?

Participants

Participants from all phases of Studies 1 and 2 were recruited from Amazon Mechanical Turk (MTurk), an online platform commonly used in the social sciences for collecting data from a demographically diverse population (Berinsky et al., 2012). All participants were required to have a human intelligence task (HIT) approval rate of 95% or greater and be located in the United States. Targets were recruited who were experiencing personal, distressing events and desired to receive support from others. The desire for receiving support is an important criterion as it has been proposed to be a boundary condition for when explicit support is beneficial for those in distress (Bolger & Amarel, 2007).

For this phase, targets were recruited to write about two distressing events they were currently experiencing: one causing anxiety and another causing sadness. One hundred three participants were recruited with the aim of having 100 targets complete this phase. This recruitment number was determined prior to running the study by considering the maximum number of participants that could be recruited within budgetary limitations. Two participants were excluded from all analyses for having an IP address identical to participants in a prior pilot study, and one participant was excluded for not indicating completion of the study by submitting the HIT through the MTurk interface. The final

Figure 1
Layout of Phases in Studies 1 and 2



Note. DV = dependent variable.

number of participants was 100 (age: $M = 35.3$ years, $SD = 11.08$, range = 20–70; gender: 28 male/72 female; race/ethnicity: 82% White, 6% Black, 0% Hispanic/Latino, 4% Asian, 0% Native American, 8% mixed, 0% other).

Method

All methods reported in this article were approved by the Columbia University Institutional Review Board. Raw data and scripts for reported analyses can be accessed at https://osf.io/2cd3f/. All phases of the studies reported recruited participants from MTurk by providing a link to Qualtrics (documentation of instructions and all items/measures administered are reported in the online supplemental materials). In all phases, after clicking the link for the study, participants provided consent and completed a Captcha verification. All written responses were reviewed by an experimenter to ensure that participants had followed instructions and engaged appropriately with the study material.

For this phase, a HIT was posted on MTurk to recruit targets currently experiencing both a personal event causing anxiety and an event causing sadness. In this phase, participants first completed questionnaires that assessed their emotional state. During two trials, targets were then instructed to write about an event in their lives that they would like to receive social support for. In one trial, they wrote about an event causing them to experience anxiety, and in the other trial, they wrote about an event causing sadness. Targets were required to provide written responses that were between 600 and 1,200 characters (approximately 100–200 words; see Figures S1–S3 in online supplemental materials for breakdowns of topics discussed in targets' events). The order in which targets wrote about an event causing either anxiety or sadness was randomized across participants. For this phase, a within-subjects design was used because a pilot study indicated that when using a between-groups design, participants asked to report an event causing *either* anxiety or sadness tended to report events that elicited both of these emotions to similar degrees, as opposed to events primarily causing one emotion over the other.

After writing about their event, targets rated the greatest amount of each of the following emotions they experienced while thinking about the event (ratings for Study 1 were made on a 9-point Likert scale unless otherwise indicated; 1 = *not at all*, 5 = *somewhat*, 9 = *extremely*): anxiety, sadness, interest, and surprise. While anxiety and sadness were assessed to confirm that these emotions were primarily experienced in the respective conditions, surprise and interest were administered as control and filler items that were neutral in valence. We had no a priori predictions for differences between the anxiety and sadness conditions for surprise and interest. After completing these emotion ratings, targets indicated their beliefs about social support strategies by rating how helpful they thought it would be to receive emotional support and advice on what to do regarding the event. To assess the impact of the events on the targets' lives, targets then rated on the following screen how important the event was to them and how complicated the event was. The same procedures were completed for the second trial, in which targets wrote about another event currently causing either anxiety or sadness (whichever had not been written about in the first trial). After the second trial, targets provided consent regarding whether or not they would like to receive written support from another participant for their events and then completed individual differences measures. A final attention check consisting of a simple multiple-choice arithmetic question was administered before participants received a debriefing statement and were requested to submit a code to indicate completion (the attention check was administered in both phases of Study 1; as no one failed this check, it was not administered in Study 2). Participants took on average 36 min to complete this phase and were compensated $2.

Results

Manipulation Checks. Manipulation checks were conducted to confirm that targets primarily experienced anxiety and sadness in the respective conditions, that the events reported were impact-

ful in the targets' lives (i.e., important and complicated), and that the events causing anxiety and sadness were not differentially impactful. All analyses in this article were conducted with R Version 3.5.0 (R Core Team, 2018).

Emotions Induced by Events. To confirm that targets primarily experienced anxiety and sadness from the events they reported in the anxiety and sad conditions, respectively, separate repeated-measures analyses of variance (ANOVAs) were conducted on the emotion ratings in each condition. For the anxiety condition, the repeated-measures ANOVA (Greenhouse-Geisser corrected) indicated a significant difference among the four emotion categories, $F(2.44, 241.93) = 91.06$, $p < .001$, $\eta^2_G = .39$, and post hoc tests with Bonferroni correction for multiple comparisons demonstrated that the mean for anxiety ratings was significantly (all ps $\leq .001$) greater than the means for all other emotion categories. For the sad condition, a repeated-measures ANOVA (Greenhouse-Geisser corrected) also indicated a significant difference among the four emotion categories, $F(2.59, 256.72) = 92.95$, $p < .001$, $\eta^2_G = .38$, and post hoc tests with Bonferroni correction for multiple comparisons demonstrated that the mean for sadness ratings was significantly (all ps $\leq .001$) greater than the means for all other emotions (see Supplemental Table S1 for descriptive statistics and comparisons).

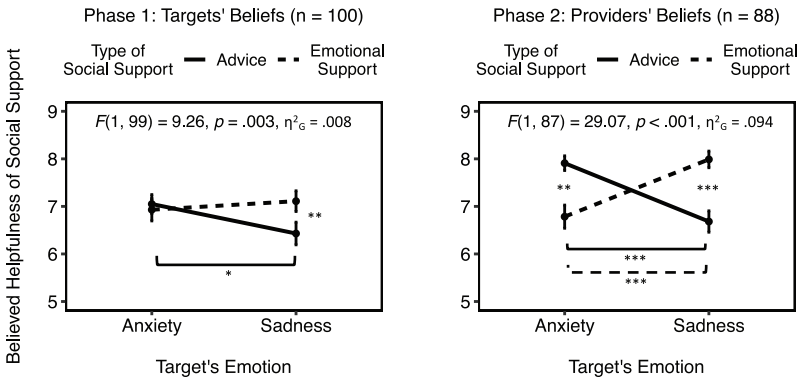
Paired t tests indicated that anxiety was more greatly experienced in the anxiety than in the sad condition, $M_{Diff} = 1.54$, 95% CI [1.11, 1.97], $t(99) = 7.17$, $p < .001$, $d = .78$, whereas sadness was more greatly experienced in the sad condition than in the anxiety condition, $M_{Diff} = 1.81$, [1.33, 2.29], $t(99) = 7.46$, $p < .001$, $d = .89$. There were no significant differences between the anxiety and sad conditions for ratings of interest, $M_{Diff} = .13$, [−.27, .53], $t(99) = .65$, $p = .52$, $d = .050$, and surprise, $M_{Diff} = -.09$, [−.53, .35], $t(99) = -.41$, $p = .68$, $d = -.037$. These analyses confirm that anxiety was the primary emotion elicited by targets' events in the anxiety condition, whereas sadness was the primary emotion elicited by the events reported in the sad condition.

Impact of Events. Overall, targets rated events in both the anxiety and sad conditions to be highly important (anxiety: $M = 8.24$, $SD = 1.30$; sad: $M = 8.33$, $SD = 1.26$) and complicated (anxiety: $M = 7.47$, $SD = 1.97$; sad: $M = 7.56$, $SD = 1.88$). Paired t tests indicated that there were no significant differences between conditions for ratings of importance, $M_{Diff} = -.09$, 95% CI [−.37, .19], $t(99) = -.64$, $p = .53$, $d = -.071$, and degree of complexity, $M_{Diff} = -.09$, [−.55, .37], $t(99) = -.39$, $p = .70$, $d = -.047$.

Key Finding: Targets Believe Advice and Emotional Support to Be Differentially Helpful for Anxiety and Sadness. To assess whether targets believe advice and emotional support are differentially helpful depending on whether they are experiencing anxiety or sadness, we conducted a two-way repeated-measures ANOVA to test whether the interaction between the target's emotion (levels: anxiety, sad) and type of social support strategy (levels: advice, emotional support) determines how helpful social support is believed to be. This was followed by planned comparisons to test simple main effects assessing whether one strategy is believed to be more helpful than the other within each emotion condition and whether each one of the strategies is believed to be differentially helpful for anxiety and sadness.

The interaction was significant, $F(1, 99) = 9.26$, $p = .003$, $\eta^2_G = .008$, with no significant main effects for either emotion condition, $F(1, 99) = 1.52$, $p = .22$, $\eta^2_G = .002$, or type of social support strategy, $F(1, 99) = 2.89$, $p = .092$, $\eta^2_G = .004$ (see Figure 2). This indicates a small but statistically significant difference of differences between the believed helpfulness of situation modification and reappraisal for anxiety and sadness. Planned comparisons were then conducted to test the following simple main effects: (a) whether advice is believed to be more helpful than emotional support when targets are experiencing anxiety, (b) whether emotional support is believed to be more helpful than advice when

Figure 2
Study 1



Note. In Phase 1, a repeated-measures ANOVA indicated that targets believed social support strategies to be differentially helpful (1 = *not helpful at all*, 5 = *somewhat helpful*, 9 = *extremely helpful*) depending on whether they were primarily experiencing anxiety or sadness. In Phase 2, a repeated-measures ANOVA indicated that providers believed advice and emotional support to be differentially helpful for targets depending on whether targets were primarily experiencing anxiety or sadness. *EMM* ± 1 standard error of the mean.
* $p < .05$. ** $p < .01$. *** $p < .001$, family-wise error corrected.

targets are experiencing sadness, (c) whether advice is believed to be more helpful when targets are experiencing anxiety than when experiencing sadness, and (d) whether emotional support is believed to be more helpful when targets are experiencing sadness than when experiencing anxiety. Significance for the planned comparisons was determined by adjusting alpha levels with Bonferroni correction to account for family-wise error ($p < .05/4$). Two of these comparisons were significant, indicating that the interaction was driven by differences in how helpful advice was believed to be for anxiety and sadness. Within the anxiety condition, advice (estimated marginal mean [*EMM*] = 7.05, *SE* = .20) and emotional support (*EMM* = 6.93, *SE* = .24) were not believed to be differentially helpful. However, within the sad condition, advice (*EMM* = 6.43, *SE* = .24) was believed to be significantly less helpful than emotional support (*EMM* = 7.11, *SE* = .22). Targets believed advice to be significantly less helpful when experiencing sadness than when experiencing anxiety. However, targets did not believe emotional support to be more helpful when experiencing sadness than when experiencing anxiety (see Table 1 for comparisons).

Phase 2: Do Providers Believe Advice and Emotional Support Are Differentially Helpful for Anxiety and Sadness?

Participants

One hundred four providers were recruited in four separate groups for this phase. Sixteen participants were excluded from analyses for having an identical IP address as another participant in a prior phase or pilot study, not submitting the HIT, or not following instructions in their written response (i.e., not writing directly to the target or writing responses unrelated to the target's event). The final sample consisted of 88 participants (age: *M* = 35.63, *SD* = 12.27, range = 20–66; gender: 25 male/63 female; race/ethnicity: 74% White, 9% Black, 8% Hispanic/Latino, 5% Asian, 1% Native American, 2% mixed, 1% other). See the "Method" section below regarding how the recruitment number was determined.

Method

Four groups of providers were recruited to counterbalance the order of the tasks in this phase. Every provider in each of the four groups responded to two events from a target in Phase 1 describing an event causing anxiety and an event causing sadness. Forty events from 20 targets were selected from Phase 1 (see online supplemental materials for selection criteria), and providers from all four groups responded to this set of events. We aimed to recruit at least one participant from each of the four groups to be randomly paired with each one of the 20 targets. Recruitment for each group was terminated when at least one participant had responded to each of the 20 targets.

Each group was recruited through a separate HIT that provided a link to complete this phase. Participants were instructed to read the target's event. Depending on the group, providers either read the anxiety- or sadness-inducing event first. After reading the first event, providers rated the target's emotions on categories identical to those rated by targets in Phase 1. Providers then wrote a response to provide support to the target that was between 600 and 1,200 characters in length (approximately 100–200 words). These written responses were not analyzed and thus will not be further discussed. Depending on the group, participants either rated the target's emotions first or wrote the response to the target first. Providers made additional ratings and then completed the same procedures for a second trial in which they read the target's other event. After completing the second trial, providers were shown the event from the first trial. They were instructed to read the event again and then rate how helpful they believed emotional support and advice would be for the target. Providers then completed the same procedures for the event presented in the second trial. After this, individual differences and demographics measures were administered (see online supplemental materials for details and all items assessed). Participants took on average 42 min to complete this phase and were compensated $2.

Results

Manipulation Checks. As with the manipulation checks for Phase 1, analyses confirmed that providers perceived targets as primarily experiencing anxiety and sadness in the respective conditions. These analyses are detailed in the online supplemental materials.

Key Finding: Providers Believe Advice and Emotional Support to Be Differentially Helpful for Anxiety and Sadness. To assess whether providers believe advice and emotional support are differentially helpful for targets experiencing anxiety and sadness, we conducted a two-way repeated-measures ANOVA to test whether the interaction between the target's emotion (levels: anxiety, sad) and type of social support strategy (levels: advice, emotional support)

Table 1
Simple Main Effects for Study 1

Planned comparison	M_{Diff} [95% CI]	*SE*	*t*	*df*	*p*	*d*
Phase 1: Targets' beliefs						
Anxiety condition: Advice > emotional support	.12 [−.41, .65]	.21	.58	99	.57	.055
Sad condition: Emotional support > advice	.68 [.14, 1.22]	.21	3.19	99	.002**	.30
Advice condition: Anxiety > sadness	.62 [.072, 1.17]	.22	2.88	99	.005*	.28
Emotional support condition: Sadness > anxiety	.18 [−.40, .76]	.23	.79	99	.43	.079
Phase 2: Providers' beliefs						
Anxiety condition: Advice > emotional support	1.12 [.35, 1.90]	.31	3.69	87	<.001**	.59
Sad condition: Emotional support > advice	1.31 [.56, 2.05]	.29	4.49	87	<.001***	.69
Advice condition: Anxiety > sadness	1.23 [.57, 1.89]	.26	4.76	87	<.001***	.68
Emotional support condition: Sadness > anxiety	1.20 [.53, 1.88]	.26	4.58	87	<.001***	.60

Note. Diff = difference; CI = confidence interval; *SE* = standard error. Beliefs rated on 9-point Likert scale (1 = *not helpful at all*, 5 = *somewhat helpful*, 9 = *extremely helpful*). 95% confidence intervals adjusted with Bonferroni correction for simple main-effects comparisons within each phase.
* $p < .05$. ** $p < .01$. *** $p < .001$, family-wise error corrected.

determines how helpful providers believe social support will be for the targets. As in Phase 1, this was followed by planned comparisons to test simple main effects assessing whether one strategy is believed to be more helpful than the other within each emotion condition and whether each one of the strategies is believed to be differentially helpful for anxiety and sadness.

The interaction was statistically significant, $F(1, 87) = 29.07$, $p < .001$, $\eta^2_G = .094$, with no main effects of either targets' emotion, $F(1, 87) = .008$, $p = .93$, $\eta^2_G = 0$, or type of social support strategy, $F(1, 87) = .22$, $p = .64$, $\eta^2_G = .0006$ (see Figure 2). All four planned comparisons were significant after Bonferroni correction. For targets experiencing anxiety, providers believed advice ($EMM = 7.91$, $SE = .15$) to be more helpful than emotional support ($EMM = 6.78$, $SE = .24$). Conversely, for targets experiencing sadness, providers believed emotional support ($EMM = 7.99$, $SE = .17$) to be more helpful than advice ($EMM = 6.68$, $SE = .22$). Providers believed advice to be more helpful for targets experiencing anxiety than for targets experiencing sadness. However, providers believed emotional support to be more helpful for targets experiencing sadness than for targets experiencing anxiety (see Table 1).

Study 2: Helpfulness of Social Emotion Regulation Strategies for Anxiety and Sadness

Study 1 provided initial support for our predictions regarding a strategy-emotion fit for social support strategies. However, it is unclear whether this framework extends to strategies conceptualized in the emotion regulation literature. It is also unknown whether these strategies will be judged to be differentially helpful by targets when actually implemented by providers.

Study 2 addressed these issues by first assessing the beliefs that targets (Phase 1) and providers (Phase 2) have about the helpfulness of emotion regulation strategies that aim to directly modify either the target's situation (i.e., situation modification) or their cognitive appraisals (i.e., reappraisal) for events causing anxiety and sadness. To assess how helpful the strategies actually are when implemented, providers in Phase 2 were trained to implement these strategies with written responses to help targets with their events. Then, in Phase 3, providers' responses were sent to targets for them to judge how helpful the social regulation strategies are. Finally, as it may take a prolonged period of time for targets to assess how helpful the strategies have been in their lives, we recontacted targets approximately a month later to have them judge how helpful the provider's response had been for them since they received it (Phase 4).

Prior research has demonstrated that individual differences in targets' affective and social functioning can impact the availability and outcomes of social support (Dunkel-Schetter et al., 1987). For example, the use of positive reappraisal is associated with having more social support (Dunkel-Schetter et al., 1987), and trait reappraisal (measured by the reappraisal subscale of the Emotion Regulation Questionnaire, or ERQ-R) is associated with having closer relationships and increased sharing of emotions with others (Gross & John, 2003). These findings suggest that the tendency to use reappraisal could allow targets to better use social feedback in helping them to reappraise events. As such, to reduce noise in targets' assessments of social emotion regulation, we planned to adjust for targets' trait tendency to use reappraisal (ERQ-R), as well as for other traits associated with targets' social and affective functioning. Trait empathy was a variable predicted to influence outcomes due to the importance of empathy in interpersonal functioning, while trait anxiety and depression were predicted to influence outcomes due to prior findings indicating that the tendency to experience distress is associated with impairments in seeking and obtaining social support (Taylor, 2011).

Participants

Analyses reported for targets in Phases 1, 3, and 4 were conducted on the 131 participants who met inclusionary criteria and completed all four phases of this study (age: $M = 34.41$ years, $SD = 10.21$, range = 20–71; gender: 58 male/73 female; race/ethnicity: 81% White, 3% Black, 5% Hispanic/Latino, 6% Asian, 0% Native American, 5% mixed, 0% other). Out of these 131 participants, there were 70 targets in the anxiety condition (39 received a response from a provider using situation modification, 31 received a response using reappraisal) and 61 targets in the sad condition (31 received a response using situation modification, 30 received a response using reappraisal). Analyses on the full samples of participants with valid responses in Phase 1 ($n = 241$) and Phase 3 ($n = 140$) indicated that the key findings were similar to those reported in the article (see online supplemental materials for recruitment procedures and exclusion criteria).

Analyses for Phase 2 were conducted on all 187 participants recruited as providers in Phase 2 (age: $M = 33.97$ years, $SD = 9.56$, range = 18–69; gender: 94 male/93 female; race/ethnicity: 75% White, 7% Black, 3% Hispanic/Latino, 9% Asian, 1% Native American, 3% mixed, 2% other). The total number of participants recruited for this phase was attained from the coding procedures used to determine whether a provider's written responses for targets met inclusion criteria. These coding procedures are described in the online supplemental materials and resulted in 86 providers in the situation modification condition and 101 providers in the reappraisal condition.

Phase 1: Do Targets Believe Situation Modification and Reappraisal Are Differentially Helpful for Anxiety and Sadness?

Method

Two groups of targets were recruited. One group consisted of targets currently experiencing anxiety from financial problems, and the other consisted of targets currently experiencing sadness from the loss of a close relationship. Targets were first instructed to write about their event (see Supplemental Table S2 for examples). On the next screen, targets indicated the greatest amount of each of the following emotions they experienced while thinking about the event (all scales in Study 2 are on a 7-point Likert scale unless otherwise indicated; 1 = *not at all*, 4 = *somewhat*, 7 = *extremely*): anxiety, sadness, surprise, calm, and happiness. Targets then rated how helpful they believed situation modification and reappraisal would be. To replicate results from Study 1, targets rated how helpful they believed advice and emotional support would be. As in Study 1, targets rated how important and complicated the event was. To address potential differences in controllability of the events, targets rated how much they were able to change the event, as well as how much they were able to think

about the event in a different way. After completing these ratings, targets indicated whether or not they consent to being recontacted to receive responses from providers.

Individual differences measures were then administered so that we could account for targets' social and affective functioning. The ERQ-R was administered as the tendency to use reappraisal has been associated with more adaptive social functioning and is likely to impact how one judges the helpfulness of social emotion regulation. This subscale consists of six items (e.g., "I control my emotions by changing the way I think about the situation I'm in") rated on a 7-point Likert scale (1 = *strongly disagree*, 7 = *strongly agree*) and has demonstrated acceptable levels of reliability (Gross & John, 2003). In addition, the trait scale of the Spielberger State–Trait Anxiety Inventory (STAI-T, Form Y), the Center for Epidemiologic Studies Depression Scale (CES-D), and the Interpersonal Reactivity Index (IRI; a measure of trait empathy) were administered to account for trait levels of distress and interpersonal functioning as these variables are associated with social support outcomes (Taylor, 2011). The STAI-T (Form Y) is a commonly used scale for assessing trait anxiety. It consists of 20 items (e.g., "I feel nervous and restless") on a 4-point Likert scale (1 = *almost never*, 4 = *almost always*; Spielberger, 1983) and has demonstrated acceptable levels of reliability (Spielberger & Reheiser, 2003). The CES-D consists of 20 items on a 4-point Likert scale (0 = *rarely*, 3 = *all of the time*), which assess how often participants experienced symptoms of depression over the past week (e.g., "I felt that I could not shake off the blues even with help from my family"; Radloff, 1977). The IRI is a multidimensional measure that assesses different components of trait empathy. It consists of 28 items (e.g., "I often have tender, concerned feelings for people less fortunate than me") on a 5-point Likert scale (0 = *does not describe me well*, 4 = *describes me very well*) and has demonstrated acceptable levels of reliability (Davis, 1983). After completing these measures, targets provided demographics information. The average amount of time taken to complete this phase was 25.6 min, and participants were compensated $3.

Results

Manipulation Checks. As with Study 1, anxiety and sadness were the primary emotions elicited by targets' events in the respective conditions. See Table S3 and analyses in online supplemental materials.

Impact of Events. We assessed whether events causing anxiety and sadness differed on levels of importance, complexity, and perceived controllability. Targets in the anxiety and sad conditions rated their events to be highly important (anxiety: $M = 6.39$, $SD = .84$; sad: $M = 5.84$, $SD = 1.19$) and complicated (anxiety: $M = 5.01$, $SD = 1.72$; sad: $M = 5.07$, $SD = 1.59$). Independent-samples t tests indicated that participants in the anxiety condition rated their events to be more important than participants in the sad condition, $M_{Diff} = .55$, 95% CI [.19, .91], $t(106.2) = 3.02$, $p = .003$, $d = .54$, but there was no significant difference between conditions regarding how complicated the events were, $M_{Diff} = -.052$, [−.62, .52], $t(128.49) = -.18$, $p = .86$, $d = -.031$.

There was no significant difference between the anxiety ($M = 3.37$, $SD = 1.47$) and sad ($M = 2.89$, $SD = 1.51$) conditions regarding how much targets believed they were able to change their event, $M_{Diff} = .48$, 95% CI [−.030, 1.00], $t(125.55) = 1.87$, $p = .064$, $d = .33$. There was also no significant difference between the anxiety ($M = 3.96$, $SD = 1.52$) and sad ($M = 3.66$, $SD = 1.57$) conditions regarding how much targets were able to think differently about the event, $M_{Diff} = .30$, [−.23, .84], $t(125.28) = 1.11$, $p = .27$, $d = .20$.

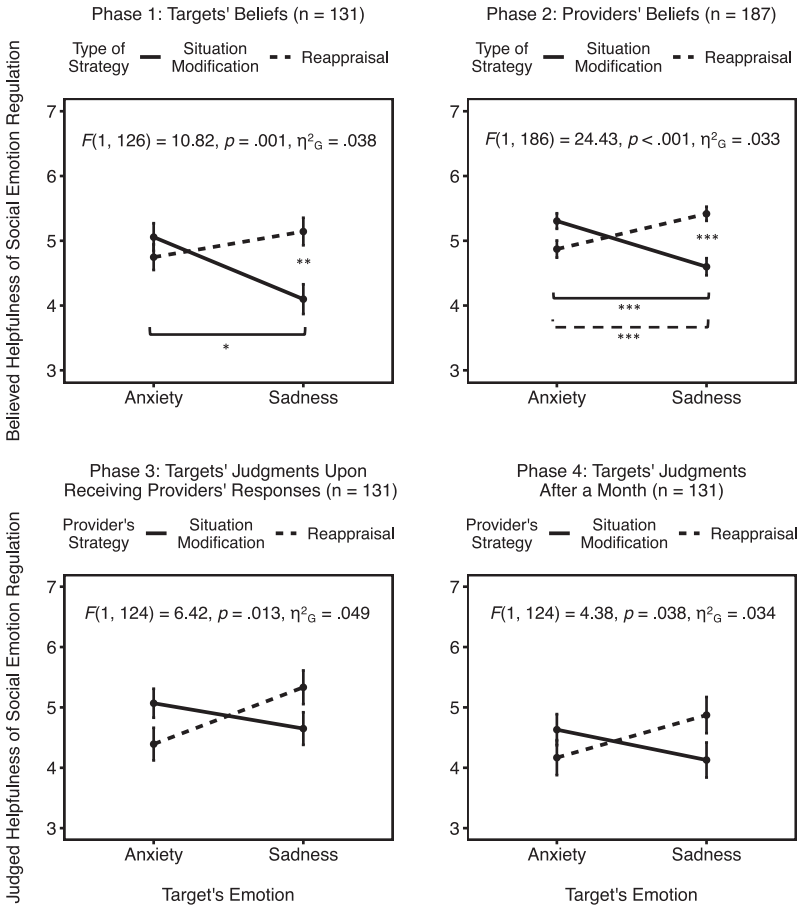
Relationships Between Beliefs About Social Support and Emotion Regulation Strategies. To establish a basis for bridging regulatory constructs from the social support and emotion regulation literatures, we performed semipartial correlations to confirm that beliefs about advice cohere with beliefs about situation modification, whereas beliefs about emotional support cohere with those for reappraisal. As expected, believed helpfulness of situation modification was correlated with believed helpfulness of advice when controlling for beliefs about emotional support, $r = .31$, $p < .001$. Also, as expected, beliefs about situation modification were not correlated with beliefs about emotional support when controlling for advice, $r = -.003$, $p = .97$.

On the other hand, beliefs about the helpfulness of reappraisal were correlated with beliefs about emotional support when controlling for advice, $r = .38$, $p < .001$, and also with advice when controlling for emotional support, $r = .27$, $p = .002$. This suggests that while targets perceived reappraisal as consisting of emotional support, they also perceived reappraisal to contain elements of problem-focused support. This finding is consistent with prior literature that has conceptualized reappraisal as both an emotion-focused strategy (Troy et al., 2013) as well as a problem-focused strategy (Pauw et al., 2018; Vishkin et al., 2019).

Key Finding: Targets Believe Situation Modification and Reappraisal to Be Differentially Helpful for Anxiety and Sadness. To assess whether targets believe situation modification and reappraisal are differentially helpful depending on whether they are experiencing anxiety or sadness, we conducted a two-way mixed-design analysis of covariance (ANCOVA) to test whether the interaction between the targets' emotion (between-subjects levels: anxiety, sad) and type of social emotion regulation strategy (within-subjects levels: situation modification, reappraisal) determines how helpful the strategies are believed to be. We adjusted for the following individual differences between targets due to prior literature indicating that affective and social variables impact support outcomes (Dunkel-Schetter et al., 1987; Gross & John, 2003; Taylor, 2011): trait use of reappraisal (ERQ-R; $M = 4.87$, $SD = 1.22$, Cronbach's alpha = .91), trait anxiety (STAI-T; $M = 2.31$, $SD = .76$, Cronbach's alpha = .96), and trait empathy (IRI; $M = 2.44$, $SD = .45$, Cronbach's alpha = .81). None of these variables significantly differed between emotion conditions. While trait depression (CES-D) was also expected to impact outcomes, this measure was omitted as a covariate due to its high correlation with STAI-T (see Table S4 in online supplemental materials for correlations between trait variables). As in Study 1, we conducted planned comparisons to assess simple main effects.

The ANCOVA demonstrated a significant interaction, indicating that targets believed situation modification and reappraisal to be differentially helpful for their event depending on whether they are experiencing anxiety or sadness when adjusting for ERQ-R, STAI-T, and IRI, $F(1, 126) = 10.82$, $p = .001$, $\eta^2_G = .038$ (see Figure 3). In this model, there was no significant main effect for emotion condition, $F(1, 126) = 1.59$, $p = .21$, $\eta^2_G = .007$, nor was there a significant main effect for type of emotion regulation strategy assessed, $F(1, 126) = 3.22$, $p = .075$, $\eta^2_G = .012$. Similar

Figure 3
Study 2



Note. In Phase 1, a mixed-design ANOVA indicated that social emotion regulation strategies were believed by targets experiencing anxiety or sadness to be differentially helpful (1 = *not at all*, 4 = *somewhat*, 7 = *extremely*). In Phase 2, a repeated-measures ANOVA indicated that providers believed these strategies to be differentially helpful for targets experiencing anxiety and sadness. In Phase 3, a between-subjects ANCOVA indicated that targets judged providers' responses using situation modification or reappraisal to be differentially helpful. In Phase 4, the same analysis as that in Phase 3 demonstrated that these strategies were retrospectively judged to be differentially helpful by targets after a month. Phases 1, 3, and 4 adjusted for targets' scores on ERQ-R, STAI-T, and IRI. *EMM* ± 1 standard error of the mean.
* $p < .05$. ** $p < .01$. *** $p < .001$, family-wise error corrected.

to Study 1, planned comparisons were conducted to test the following simple main effects: (a) whether targets experiencing anxiety believe situation modification to be more helpful than reappraisal, (b) whether targets experiencing sadness believe reappraisal to be more helpful than situation modification, (c) whether targets experiencing anxiety believe situation modification to be more helpful than targets experiencing sadness, and (d) whether targets experiencing sadness believe reappraisal to be more helpful than targets experiencing anxiety. Two of these comparisons were significant, indicating that targets believed situation modification to be less helpful for sadness than for anxiety. Targets experiencing anxiety did not believe situation modification (*EMM* = 5.06, *SE* = .21) to be significantly more helpful than reappraisal (*EMM* = 4.75, *SE* = .20). However, targets experiencing sadness believed reappraisal (*EMM* = 5.14, *SE* = .21) to be significantly more helpful than situation modification (*EMM* = 4.10, *SE* = .23). Targets experiencing sadness believed situation modification to be significantly less helpful than targets experiencing anxiety. However, targets experiencing sadness did not believe reappraisal to be significantly more helpful than targets experiencing anxiety (see Table 2 for comparisons).

To account for potential confounds in targets' assessments of social emotion regulation, we conducted a separate ANCOVA that additionally adjusted for the following variables: (a) As prior research has demonstrated that controllability of a situation can impact the effectiveness of social support and emotion regulation strategies, we adjusted for targets' perceptions of how controllable their event was. (b) As our manipulation checks demonstrated that events causing anxiety were rated to be more important by targets than events causing

Table 2
Simple Main Effects for Study 2

Planned comparison	M_{Diff} [95% CI]	*SE*	*t*	*df*	*p*	*d*
Phase 1: Targets' beliefs						
Anxiety condition: Situation modification > reappraisal	.31 [−.40, 1.02]	.28	1.11	126	.27	.19
Sad condition: Reappraisal > situation modification	1.04 [.28, 1.81]	.30	3.48	126	<.001**	.63
Situation modification condition: Anxiety > sadness	.96 [.16, 1.76]	.32	3.04	126	.003*	.58
Reappraisal condition: Sadness > anxiety	.40 [−.34, 1.13]	.29	1.36	126	.18	.24
Phase 2: Providers' beliefs						
Anxiety condition: Situation modification > reappraisal	.43 [−.073, .94]	.20	2.16	186	.032	.25
Sad condition: Reappraisal > situation modification	.82 [.34, 1.29]	.19	4.33	186	<.001***	.50
Situation modification condition: Anxiety > sadness	.71 [.31, 1.10]	.16	4.49	186	<.001***	.41
Reappraisal condition: Sadness > anxiety	.55 [.21, .88]	.13	4.13	186	<.001***	.33
Phase 3: Targets' judgments upon receiving provider's response						
Anxiety condition: Situation modification > reappraisal	.68 [−.24, 1.60]	.36	1.87	124	.064	.46
Sad condition: Reappraisal > situation modification	.68 [−.31, 1.68]	.39	1.74	124	.084	.46
Situation modification condition: Anxiety > sadness	.42 [−.50, 1.33]	.36	1.16	124	.25	.28
Reappraisal condition: Sadness > anxiety	.94 [−.050, 1.93]	.39	2.41	124	.018	.63
Phase 4: Targets' judgments after a month						
Anxiety condition: Situation modification > reappraisal	.46 [−.52, 1.45]	.39	1.19	124	.24	.29
Sad condition: Reappraisal > situation modification	.74 [−.33, 1.81]	.42	1.76	124	.080	.47
Situation modification condition: Anxiety > sadness	.50 [−.48, 1.49]	.39	1.30	124	.20	.31
Reappraisal condition: Sadness > anxiety	.71 [−.36, 1.77]	.42	1.68	124	.096	.44

Note. Diff = difference; CI = confidence interval; *SE* = standard error. Phases 1, 3, and 4 reflect differences of estimated marginal means when adjusting for targets' traits (ERQ-R, STAI-T, IRI). Beliefs rated on 7-point Likert scale (1 = *not helpful at all*, 4 = *somewhat helpful*, 7 = *extremely helpful*). 95% confidence intervals adjusted with Bonferroni correction for simple main-effects comparisons within each phase.
* $p < .05$. ** $p < .01$. *** $p < .001$, family-wise error corrected.

sadness, we adjusted for targets' ratings of event importance. Adjusting for targets' perceptions of controllability and importance of their events (in addition to targets' trait variables) did not impact results, $F(1, 124) = 7.21$, $p = .008$, $\eta^2_G = .026$. For full reporting, an ANOVA conducted without adjusting for covariates yielded similar results, $F(1, 129) = 11.14$, $p = .001$, $\eta^2_G = .035$.

Replication of Results From Study 1. The interaction between targets' emotions and beliefs about social support was replicated. See analyses in online supplemental materials and Supplemental Table S5.

Phase 2: Do Providers Believe Situation Modification and Reappraisal Are Differentially Helpful for Anxiety and Sadness?

Method

Four groups of providers were recruited for two strategy conditions. In one condition, providers were trained to use situation modification to help targets, whereas in the other condition, they were trained to use reappraisal. Providers wrote responses to two targets from Phase 1: one primarily experiencing anxiety and another sadness from their event. Providers in two out of the four groups (one in each strategy condition) responded to a target experiencing anxiety first, whereas the other two groups responded to a target experiencing sadness first. Participants first completed a training session in which they read an example response and completed a practice trial (see online supplemental materials). After the training session, providers completed two trials in which they first responded to a target using the emotion regulation strategy they had been trained to use. All providers responded to unique events unless a prior participant had provided responses that did not meet inclusion criteria (all responses were coded to ensure they were valid; see online supplemental materials for details and Supplemental Table S2 for examples). After writing the response, providers read the event again, rated the target's emotions (identical to those in Phase 1), then indicated how helpful they believed situation modification and reappraisal would be for the target. To replicate results from Study 1, providers rated how helpful they believed advice and emotional support would be. After additional ratings, they completed the same procedures in a second trial for another target. The average amount of time taken to complete this phase was 52.1 min, and participants were compensated $6.

Results

Manipulation Checks. As with Study 1, manipulation checks confirmed that providers perceived targets as primarily experiencing anxiety in the anxiety condition and sadness in the sad condition. See analyses in online supplemental materials and Supplemental Table S3.

Key Finding: Providers Believe Situation Modification and Reappraisal to Be Differentially Helpful for Anxiety and Sadness. To assess whether providers believe situation modification and reappraisal are differentially helpful for targets experiencing anxiety or sadness, we conducted a two-way repeated-measures ANOVA to test whether the interaction between the targets' emotion (anxiety, sad) and type of social emotion regulation strategy (situation modification, reappraisal) determines how helpful providers believe the strategies to be for targets. As with prior phases, this was followed by planned comparisons to further assess whether one strategy is believed to be more helpful than the other within each emotion condition and whether each one of the strategies is believed to be differentially helpful for anxiety and sadness.

The interaction was significant, $F(1, 186) = 24.43$, $p < .001$, $\eta^2_G = .033$ (see Figure 3), with no main effects for either targets' emotion, $F(1, 186) = 1.27$, $p = .26$, $\eta^2_G = .0006$, or type of emotion regulation strategy assessed, $F(1, 186) = 1.69$, $p = .20$, $\eta^2_G = .003$. Three of the four planned comparisons were significant after Bonferroni correction. Simple main effects indicated that for targets experiencing anxiety, providers did not believe situation modification ($EMM = 5.30$, $SE = .12$) to be significantly more helpful than reappraisal ($EMM = 4.87$, $SE = .13$). However, for targets experiencing sadness, providers believed reappraisal ($EMM = 5.42$, $SE = .11$) to be significantly more helpful than situation modification ($EMM = 4.60$, $SE = .13$). Providers believed situation modification to be significantly more helpful for targets experiencing anxiety than for targets experiencing sadness. Conversely, reappraisal was believed to be significantly more helpful for targets experiencing sadness than for targets experiencing anxiety (see Table 2 for comparisons).

Replication of Results From Study 1. The interaction between targets' emotions and beliefs about social support was replicated. See analyses in online supplemental materials and Supplemental Table S5.

Phase 3: Do Targets Judge Situation Modification and Reappraisal to Be Differentially Helpful When Implemented?

Method

A message was sent through MTurk to invite targets from Phase 1 (who consented to being recontacted) to participate in a follow-up study to assess a provider's response. At the start of the study, targets entered a personalized code, which directed Qualtrics to run a customized version of the study that presented the description of their event from Phase 1 and the response from a provider implementing social emotion regulation for them. Targets read the description of their event and then rated their emotions on identical categories to prior phases. Then, they read the provider's response and rated their emotions again. On the next screen, targets were instructed to read the provider's response again and then rate how helpful it was. Targets rated how much the response implemented situation modification and reappraisal and how much it provided advice and emotional support (see online supplemental materials for details). This phase took on average 12.2 min to complete, and participants were compensated $5.

Results

Manipulation Checks. As with prior phases, anxiety was the greatest emotion experienced after targets read their event in the anxiety condition, whereas sadness was the greatest emotion experienced in the sad condition (see Supplemental Table S6). Analyses on the emotion ratings were conducted to confirm that social emotion regulation had a regulatory effect. These analyses indicated that after reading the provider's response, targets reported decreased negative emotions and increased positive emotions such that anxiety and sadness in the respective conditions were no longer rated greater than the neutral or positive control items. There were no differences between conditions in these changes (see Supplemental Table S6).

Manipulation checks were also conducted to assess whether targets could identify whether their provider implemented situation- or emotion-focused strategies. These analyses indicated that targets could not differentiate providers' responses as primarily using situation modification or reappraisal (see analyses in online supplemental materials). However, targets judged responses using situation modification as containing more advice ($M = 5.66$, $SD = 1.38$) than responses implementing reappraisal ($M = 4.57$, $SD = 1.58$), $M_{Diff} = 1.09$, 95% CI [.57, 1.60], $t(120.38) = 4.16$, $p < .001$, $d = .73$. Conversely, responses implementing reappraisal were judged as providing more emotional support ($M = 5.11$, $SD = 1.62$) than responses implementing situation modification ($M = 4.11$, $SD = 1.66$), $M_{Diff} = 1.00$, [.43, 1.57], $t(127.18) = 3.49$, $p < .001$, $d = .61$.

Key Finding: Targets Judge Situation Modification and Reappraisal to Be Differentially Helpful When Implemented. The following analyses addressed the main question of whether targets judge social emotion regulation using situation modification and reappraisal to be differentially helpful when experiencing anxiety and sadness. A between-groups ANCOVA was performed to test whether the interaction between the targets' emotion (levels: anxiety, sadness) and the type of social emotion regulation strategy implemented by the provider (levels: reappraisal, situation modification) determines how helpful targets judge providers' responses to be. As in Phase 1, we adjusted for targets' trait variables (ERQ-R, STAI-T, and IRI scores assessed in Phase 1). Then, as in prior phases, we conducted planned comparisons to assess our specific predictions for simple main effects.

When adjusting for targets' traits (ERQ-R, STAI-T, IRI), the interaction was significant, $F(1, 124) = 6.42$, $p = .013$, $\eta^2_G = .049$ (see Figure 3), with no main effects of either targets' emotion, $F(1, 124) = .98$, $p = .32$, $\eta^2_G = .008$, or type of strategy used by providers, $F(1, 124) = .000$, $p = .99$, $\eta^2_G = 0$. None of the planned comparisons were significant after Bonferroni correction (anxiety/situation modification: $EMM = 5.07$, $SE = .24$; anxiety/reappraisal: $EMM = 4.39$, $SE = .27$; sad/situation modification: $EMM = 4.65$, $SE = .27$; sad/reappraisal: $EMM = 5.33$, $SE = .28$; see Table 2 for comparisons).

As in Phase 1, we then conducted a separate ANCOVA to assess whether the perceived controllability and importance of events were confounds. As targets judged responses using situation modification to contain more advice and responses using reappraisal to contain more emotional support, we also adjusted for targets' beliefs about the helpfulness of advice and emotional support in this model (see online supplemental materials for correlations between believed and judged helpfulness of strategies). The interaction remained significant when adjusting for these variables, $F(1, 121) = 4.33$, $p = .040$, $\eta^2_G = .035$. For full reporting, an ANOVA conducted without adjusting for any individual differences was not significant, $F(1, 127) = 2.87$, $p = .092$, $\eta^2_G = .022$ (see Table S7 in online supplemental materials for estimated marginal means from all three models).

Phase 4: Do Targets Judge Situation Modification and Reappraisal to Be Differentially Helpful After a Month?

Method

Targets who completed Phase 3 were contacted again through MTurk approximately 1 month later to participate in this final phase. As in Phase 3, targets were instructed to read the event they had described in Phase 1 and then to rate their emotions as well as other aspects of the event. Targets then read the response from a provider from approximately 1 month ago in Phase 3 and rated their emotions again. Then, they read the provider's response again and judged how helpful the response had been for them since they received it. Targets provided additional ratings before completing this study (see online supplemental materials). This phase took on average 7.3 min to complete. Participants were compensated $5.

Results

As in Phase 3, a between-subjects ANCOVA was conducted to assess whether the interaction between the targets' emotion condition (levels: anxiety, sadness) and the strategy used by the provider (levels: situation modification, reappraisal) determines how helpful targets retrospectively judge providers' responses to be. As in Phases 1 and 3, targets' trait scores for ERQ-R, STAI-T, and IRI were entered as covariates. Planned comparisons were conducted to test simple main effects as in prior phases. Also, as in Phase 3, a separate ANCOVA was conducted to adjust for potential confounds.

When adjusting for targets' traits, the interaction was significant, $F(1, 124) = 4.38$, $p = .038$, $\eta^2_G = .034$ (see Figure 3). There were no main effects for either targets' emotion, $F(1, 124) = .13$, $p = .72$, $\eta^2_G = .001$, or type of strategy used by providers, $F(1, 124) = .24$, $p = .62$, $\eta^2_G = .002$. None of the planned comparisons were significant (anxiety/situation modification: $EMM = 4.63$, $SE = .26$; anxiety/reappraisal: $EMM = 4.17$, $SE = .29$; sad/situation modification: $EMM = 4.13$, $SE = .29$; sad/reappraisal: $EMM = 4.87$, $SE = .30$; see Table 2 for comparisons).

As in Phase 3, an ANCOVA was conducted to assess potential confounds, with covariates entered for targets' beliefs about social support strategies, perceived controllability of their event, and importance of the event (in addition to targets' trait variables). Adjusting for these additional variables weakened the interaction such that it became nonsignificant, $F(1, 121) = 2.35$, $p = .13$, $\eta^2_G = .019$. This was primarily due to adjusting for the relationship between targets' beliefs about social support strategies and judged helpfulness, $F(1, 121) = 6.65$, $p = .011$, $\eta^2_G = .052$. For full reporting, an ANOVA conducted without adjusting for individual differences was not significant, $F(1, 127) = 2.10$, $p = .15$, $\eta^2_G = .016$ (see Supplemental Table S7 for estimated marginal means from all three models).

Discussion

The current studies investigated how social emotion regulation strategies may be effectively implemented. We bridged research on social support, emotion regulation, and appraisal theories of emotion to hypothesize that social emotion regulation strategies would be differentially helpful for targets depending on the kind of emotion they are experiencing. Specifically, we predicted that strategies helping targets to actively modify their situations would be more helpful for anxiety, whereas strategies helping targets to modify their emotional responses would be more helpful for sadness. In Study 1, we began our investigation with strategies delineated in the social support literature (i.e., advice and emotional support). In Study 2, we extended our paradigm to test our hypotheses with emotion regulation strategies implemented socially (i.e., situation modification and reappraisal).

Our hypotheses were supported by the observation and replication of interactions between targets' emotions and helpfulness of different types of strategies. With social support strategies in Study 1, targets (Phase 1) and providers (Phase 2) believed advice and emotional support to be differentially helpful depending on whether the target was experiencing anxiety or sadness. In Study 2, this pattern was similarly demonstrated with strategies drawn from the literature on the self-regulation of emotion. Here, situation modification and reappraisal were believed to be differentially helpful when implemented socially by targets experiencing anxiety and sadness (Phase 1), as well as by providers who implemented these strategies for the targets (Phase 2). As beliefs about affective states are not always accurate, we had targets judge the effectiveness of social emotion regulation when implemented by providers (Phases 3) and retrospectively a month after receiving the provider's response (Phase 4). We again observed the predicted interaction in these phases, but this effect was only statistically significant when accounting for targets' individual differences in social and affective functioning (trait reappraisal, anxiety, and empathy). This suggests that in real-life scenarios, individual differences in social and affective traits may complicate the relationship between a target's emotions and the effectiveness of social emotion regulation such that using a specific strategy may not provide a significant benefit over using another kind of strategy.

Our predictions regarding how specific strategies would be more or less helpful for anxiety and sadness, as assessed by planned simple main-effects comparisons, yielded mixed results. While some planned comparisons supported our hypotheses, not all of the predicted differences were significant. This was especially the case for targets' beliefs about the helpfulness of social support and emotion regulation strategies as only one to two planned comparisons out of four were significant in each phase. In addition, none of the planned comparisons for targets' judgments were significant in Phases 3 and 4 of Study 2. Providers' beliefs, however, were more consistent in supporting our specific hypotheses, with three to four comparisons significant in Phase 2 of both studies. Speculatively, a reason that providers' beliefs more consistently support our hypotheses than targets' beliefs may be that greater psychological distance facilitates reasoning about meaningful events (Kross & Grossmann, 2012) and thus leads to improved assessment of regulatory strategy fit. If this is the case, providers may be in a particularly beneficial position to consider how a fitting strategy may be implemented for targets in addition to, or perhaps in lieu of, strategies that a target considers to be helpful. However, as power analyses had not been used to determine sample sizes, the studies may have been underpowered to detect effects in the planned comparisons. More highly powered studies will need to be conducted to assess whether the pattern of results from our simple main-effects analyses can be reliably demonstrated.

Prior research investigating how support and regulatory strategies "fit" with specific contexts have focused on how the controllability of a situation determines the appropriate strategy-situation fit (Cheng, 2001; Cheng et al., 1999, 2014; Cutrona, 1990; Cutrona & Russell, 1990; Folkman & Lazarus, 1980; Haines et al., 2016; Thoits, 1986; Troy et al., 2017, 2013). However, emotions are generated from overarching appraisals of one's situation (e.g., as a threat or loss) that encapsulate and convey more information than judgments of controllability. As such, targets' emotions should be a stronger determinant of strategy fit than controllability. In line with this notion, differential judgments of strategy helpfulness were not driven by perceived controllability. It should be noted, however, that targets' judgments of controllability are subjective and might not necessarily indicate the actual controllability of their situation.

Caveats

Several caveats should be considered when interpreting our results. An important caveat is that we did not observe predicted differential effects in measures that directly assess regulatory benefits, such as self-reported emotion ratings. While in Phase 3, targets reported decreased negative emotions and increased positive emotions after receiving the provider's response, there were no differential effects in these changes based on interactions between the type of strategy the target received and the primary emotion elicited by the target's situation. In addition, while targets judged the helpfulness of providers' responses in Phases 3 and 4, we do not have data that directly indicates these responses to have actually impacted targets' lives. As such, it is possible that targets' judgments of helpfulness in these phases reflect beliefs about social emotion regulation strategies as opposed to their actual effectiveness. This may be particularly the case in Phase 4. As in Phase 3, targets were asked to reread the events they had written about and the responses they received from providers, which could have led to targets using underlying beliefs about the strategies to inform their judgments of how helpful the provider's response was. In support of this explanation, there was a high correlation between judgments of helpfulness in Phases 3 and 4 ($r = .67$, $p < .001$; see Supplemental Table S4). In addition, while adjusting for targets' beliefs about the strategies did not impact results in Phase 3, the predicted interaction was no longer significant after controlling for targets' beliefs about support strategies in Phase 4. For these reasons, the results from Phases 3 and 4 should be interpreted cautiously and cannot directly inform how different regulatory strategies are effective for targets.

Another caveat is that the effect sizes of the key results are small, which may limit their practical implications. Across our studies, targets generally perceived the different regulatory strategies to be fairly helpful, regardless of the emotion they were primarily experiencing. This is consistent with prior literature, which has proposed both problem- and emotion-focused strategies to be effective for coping with stressors (Folkman & Lazarus, 1980; Pauw et al., 2018). It may be that both types of strategies are fairly helpful for distressful events as any one emotion is often experienced in combination with other kinds of emotions. Indeed, this was the case in the current studies where anxiety was primarily experienced for anxiety-inducing events but sadness was also evoked to some degree—and vice versa. For these mixed emotional states, both situation modification and reappraisal may be helpful as social emotion regulation strategies. As such, even though different social emotion regulation strategies may be particularly helpful for different kinds of emotions, the mixed emotional nature of real-life stressors could have led our studies to detect only small differences in strategy helpfulness as a function of targets' emotions. That said, it may be that more pronounced strategy-emotion fit effects could emerge over time—as in the case of a close relationship—if strategies are repeatedly used to regulate specific emotions. It might be that in such cases, the relatively small benefits of each instance of strategy-emotion fit could accumulate over time, generating increasing benefits in well-being for the target and improved relational outcomes with the regulation provider.

Prior literature has made theoretical and empirical distinctions between problem- and emotion-focused strategies (Carver et al., 1989; Cutrona, 1990; Folkman et al., 1986; Thoits, 1986). However, targets may still conflate the two types of strategies or fail to perceive these strategies to be mutually exclusive. This would potentially diminish the hypothesized effects and could be another reason as to why small or absent effects were observed. This issue was apparent in that targets did not perceive providers' responses in Study 2 as implementing differential levels of situation modification and reappraisal. It may be the case that if providers were trained to implement these strategies in a manner that would make them more apparent to targets, stronger effects would be seen between the two types of regulatory strategies as a function of the target's emotion.

Finally, the events causing targets to experience anxiety and sadness were somewhat confounded with situations involving either financial worries or the loss of a relationship. While in Study 1, targets were free to report any kind of event primarily causing either anxiety or sadness, Study 2 constrained the types of situations reported. These types of situations are consistent with appraisal theories of emotion that posit anxiety to be a response to potential threat and sadness to be a response to irrevocable loss. However, future work will need to assess whether our results generalize to a wider array of situations. In addition, further work will need to assess whether the strategy-emotion fit framework applies to other kinds of emotions.

Implications for Research on Social Support and Emotion Regulation

We view our findings as providing both a methodological and conceptual framework for understanding the ways in which social support and social emotion regulation can be best implemented. Mismatched support for a given context has been proposed to be one reason that support can at times lead to negative outcomes (Bolger & Amarel, 2007; Maisel & Gable, 2009; Zee et al., 2018). The present research indicates that a target's emotions may be crucial for identifying when and why receipt of support can result in positive and negative outcomes (Bolger et al., 1996).

Methodologically, research on social support often investigates the provision and impact of support within close relationships (e.g., romantic couples). By contrast, our studies examined social emotion regulation among strangers. While some prior research has found specific types of social regulation from strangers to be ineffective (e.g., touch; see Coan et al., 2017), observations from

daily life indicate that our interactions with others are increasingly occurring via text with others outside of our close relationships. Accordingly, research has started to investigate the efficacy of text-based support provided through online channels of communication where supportive exchanges often occur with individuals outside of familiar and close relationships (Doré et al., 2017; Van Zalk et al., 2011). Our methods involving the use of text-based responses among strangers may provide insights into how support can be effectively implemented through these channels of communication. While it is important for future work to ask whether our results generalize to how social emotion regulation may be implemented in close relationships and in naturalistic conversations, our studies offer a method for understanding processes within dyads that isolates the effect of support from other variables present within a preexisting relationship or in-person dialogue, such as relationship quality or body language.

Although much can be drawn from the social support literature to understand social emotion regulation—indeed, this is what motivated us to initially investigate our hypotheses in the context of social support—there are important conceptual and methodological distinctions between the two kinds of research. One key distinction concerns the time course over which these two topics are often considered. Emotion regulation has traditionally been studied in the context of phasic, short-term emotional experiences (e.g., regulating negative responses to graphic images). Congruent with this, our research on social emotion regulation assesses how specific regulatory strategies target relatively phasic emotional events. By contrast, research on social support typically focuses on relationships with others over longer time periods, from months to years. For example, in the social support literature, it has been argued that close relationships improve well-being over time via everyday "ordinary" interactions with close others, as opposed to the receipt of specific instances of support (Lakey & Orehek, 2011). Future research can continue to bridge understanding of social support and emotion regulation by assessing how social emotion regulation contributes to more general measures of well-being assessed over longer time periods.

Clinical Implications and Future Directions

Research over the past few decades has delineated the mechanisms and neural substrates underlying the self-regulation of emotions, particularly reappraisal (Ochsner & Gross, 2008), and applied these findings to investigate how emotion regulation is impacted in mental health disorders (Berking & Wupperman, 2012; Gross & Muñoz, 1995; Silvers et al., 2016). Building on this foundation, research on social emotion regulation can investigate how mechanisms involved in the self-regulation of emotion may underlie the provision and receipt of social emotion regulation in clinical populations (Hofmann, 2014; Marroquín, 2011; Reeck et al., 2016). This may lead to valuable insights into how social and affective processes interact and are impacted in psychiatric disorders.

Because contemporary research on emotion regulation has focused on the outcomes and mechanisms of reappraisal, relatively little is understood about situation modification. Our findings indicate that situation modification is particularly helpful for those experiencing anxiety. However, it is unknown how the implementation of social emotion regulation should differ for emotions experienced in clinical versus nonclinical contexts. Upon initial consideration, situation modification may appear to be a strategy that resembles avoidance of an anxiety-inducing stimulus. In a clinical context, avoidant behaviors are understood to maintain maladaptive anxiety by preventing exposure to a feared stimulus, thus preventing one from learning that the feared stimulus is in fact safe (Salkovskis, 1991). However, avoidance is both cognitive and behavioral, with its maladaptive consequences attributed to inhibition of thoughts, emotions, or behaviors (Ottenbreit & Dobson, 2004). In contrast, actively confronting and modifying a problematic situation is generally considered to be adaptive, particularly when such actions increase sense of agency (Boeke et al., 2017; Hartley et al., 2014; LeDoux & Gorman, 2001). Future research can directly investigate how social emotion regulation may be used to enhance a target's sense of agency and the impact of this on anxiety.

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